(No Model.)

H. A. HUEFFNER.

GRINDING ROLLS FOR FLOUR MILLS.

No. 386,014. Patented July 10, 1888.

Fig. I.

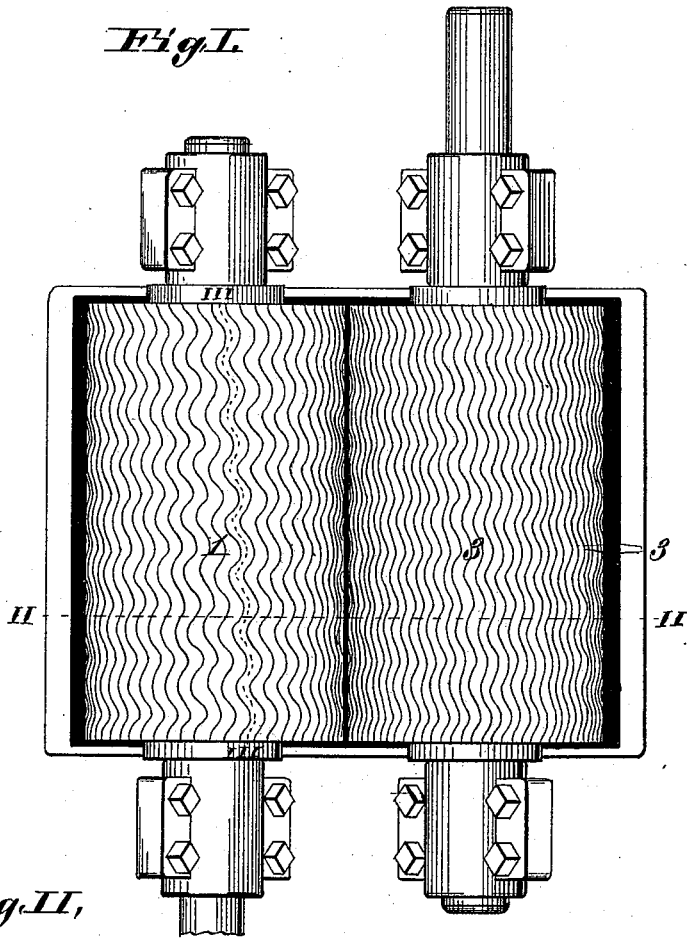

Fig. II.

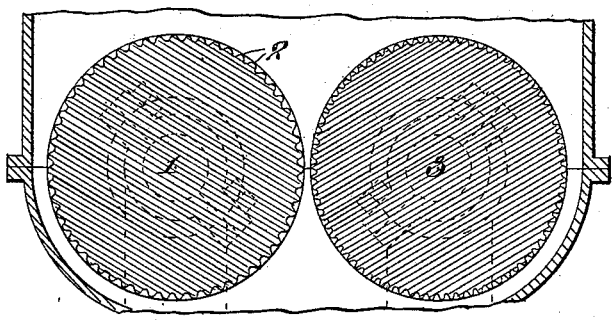

Fig. III.

Attest:

Charles Pickles,
E. Arthur.

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By Knight Bros.
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UNITED STATES PATENT OFFICE.

HENRY A. HUEFFNER, OF PALMER, ILLINOIS.

GRINDING-ROLLS FOR FLOUR-MILLS.

SPECIFICATION forming part of Letters Patent No. 386,014, dated July 10, 1888.

Application filed June 6, 1887. Serial No. 240,444. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. HUEFFNER, of Palmer, in the county of Christian and State of Illinois, have invented certain new and useful Improvements in Grinding-Rolls for Flour-Mills, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure I represents a top or plan view of a pair of rolls constructed and combined according to my invention. Fig. II is a cross-section taken on line II II, Fig. I. Fig. III is a detail horizontal section taken on line III III, Fig. I.

My invention relates to corrugated rolls for reducing grain; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, 1 represents a roll provided on its face or periphery with corrugations 2. These corrugations are preferably arranged spirally on the face of the roll, and they are made in serpentine or waving form, so that their working-edges will have a greater length, and consequently a greater amount of breaking-surface than corrugations of any other form would have.

I am aware that it is not new to produce rolls with corrugations running in a direction spirally around the periphery of the roll; but I believe it to be my invention to make these corrugations in serpentine or waving form, as shown, thus producing a greater amount of breaking-surface, as many more angles are produced between the corrugations of the two rolls.

The serpentine form of my corrugations is illustrated in Figs. I and III; but I do not confine myself to any particular size of corrugations, as the same may be made small or large, as may be desired.

3 represents a roll on which the corrugations are the same as on roll 1, as regards the waving or serpentine shape, but which shows a greater number of corrugations, and consequently finer corrugations. This roll is preferably so arranged as to be driven faster than the one with the coarser corrugations; or, in other words, the rolls are arranged to have differential speeds. The crests of the corrugations are preferably made rounding, as shown in Fig. II.

The especial advantages of my improved roll are that, in making the corrugations of serpentine form, they present a greater breaking-surface, by reason of the greater extent of the crests of the corrugations and the number of crossing angles between the corrugations of the two rolls, and the concave sides of the corrugations on roll 1 moving toward and coming opposite to the convex or opposite sides of the curves on roll 3, provides a means by which the grains are crushed or broken, as described, and I am thus enabled to make a greater percentage of break-flour than is obtainable with the old form of rolls, and the corrugations being serpentine or in curved waves, the tendency of the material to collect at one end or at any one point, as is the case with ordinary spirally-arranged grooves, or grooves having a number of angles therein, is avoided.

I prefer, as stated, to arrange the corrugations spirally upon the roll, as well as making them serpentine, and I believe it to be my invention to construct a roll with curved serpentine or wavy corrugations arranged spirally upon the face of a roll of a flour-mill.

I am aware, as stated, that it is not new to form corrugations spirally on a roll, nor is it new to make the corrugations zigzag—that is to say, having several angular turns—but these form no part of my invention, the construction of which has obvious advantages over such forms, which have been hereinbefore set forth.

What I claim as new, therefore, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, a roll for flour-mills provided with curved serpentine corrugations, substantially as set forth.

2. As a new article of manufacture, a roll for flour-mills provided with serpentine corrugations arranged spirally upon the face of the roll, substantially as set forth.

3. The combination of two grinding-rolls, each provided with serpentine spiral corrugations, and one of said rolls having a finer dress than the other, as herein set forth.

HENRY A. HUEFFNER.

In presence of—
JOS. WAHLE,
EDW. S. KNIGHT.